	**Document Release Authorization To IMS**	

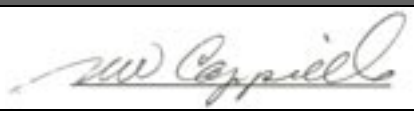
Los Alamos National Laboratory

PO Box 1663 MS H816
Los Alamos, NM 87545

This is a milestone document: ☐ YES ✔ NO

Doc No:	LA-UR-04-3113	Release Date:	5/3/04
Title:	Support for Program of Systematic Study of Minor Actinide (MA) Nuclear Characteristics Necessary for R&D of ADS Burners		
Author(s):	Michael W. Cappiello, Los Alamos National Laboratory		

Approved for Release

Approved by	Typed Name	Date	Signature
Principal Author:	Michael W. Cappiello	5/3/04	
LANL Program Manager:	Michael W. Cappiello	5/3/04	

Advanced Fuel Cycle Initiative
Program Office
P.O. Box 1663, Mail Stop H816
Los Alamos, New Mexico 87545
(505) 665-4595/Fax (505) 667-7443

Date: May 3, 2004
Doc #: 2003-27
(LA-UR-04-3113)

Mr. Norbert Jousten, Executive Director
International Science and Technology Center
9, Luganskaya Ulitsa
115516 Moscow
Russia Federation
E-mail: istcinfo@istc.ru

Subject: Support for Program of Systematic Study of Minor Actinide (MA) Nuclear Characteristics Necessary for R&D of ADS Burners

Dear Mr. Jousten

The purpose of this letter is to express our strong support for the PROGRAM OF SYSTEMATIC STUDY OF MINOR ACTINIDE (MA) NUCLEAR CHARACTERISTICS NECESSARY FOR R&D OF ADS BURNERS prepared by Prof. Leonid Ponomarev (Scientific Leader of MUCATEX and head of Theoretical Division RRC Khurchatov Institute) which contains the following ISTC proposals:

I. High precision measurement of minor actinide nuclear data in resonance neutron energy range (Manager Eugeny Gomin, RRC Khurchatov Institute (obtaining ISTC registration number)
II. Measurement of fission cross-section energy dependence for minor actinides in high neutron energy range (Manager Igor Ivanin, RFNC-VNIIEF), ISTC Proposal #2952
III. Measurements of the cross sections of fast and resonance neutron-induced fission of minor actinides for their transmutation with accelerator driven systems (Manager Boris Fursov, IPPE), ISTC Proposal #1749
IV. Measurement of transmutation properties of minor actinides irradiated in intermediate reactor neutron spectrum (Manager Mikhail Melnik, RIAR), ISTC Proposal #2925
V. Benchmark experiments on MA transmutation at BFS critical facilities for justification of ADS-burner design (Manager Yuri Khomyakov, IPPE), ISTC Proposal #2884

The five subprojects are complementary and will provide a comprehensive set of Minor Actinide nuclear data, which are very necessary for evaluating different scenarios of nuclear material transmutation. At the Los Alamos National Laboratory we are investigating the use of low

conversion rate fast reactors, accelerator driven fast spectrum systems and even thermal reactors for the transmutation of plutonium and minor actinides. For many isotopes the basic nuclear data (fission and capture cross sections, multiplicity) are scarce and need to be measured in order to reduce the uncertainties in our predictions of transmutation rates. We have completed sensitivity analyses that identify the isotopes of highest priority for experimental measurements. This list overlaps very nicely with the measurements proposed in Prof. Ponomarev's program. The data from the program will thus be immediately useful in many of our projects.

The projects are very well organized with a strong group of participants and excellent equipment and facilities, including targets, accelerator facilities, and radiochemistry laboratories. The resulting data will be of high quality and complementary to both differential and integral measurements over a broad range of incident energies. I strongly recommend that this program be chosen for implementation and completion within the ISTC framework.

Sincerely,

Michael Cappiello
Program Manager, Advanced Fuel Cycle Initiative
Los Alamos National Laboratory

cy: Tom Ward, DOE-NE
Buzz Savage, DOE-NE
Frank Goldner, DOE-NE
Eric Pitcher, LANL, T-16
Dr. James Bradbury